

Mathematical simulation of nonaqueous-phase organic liquid infiltration in soils

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Abstract

A mathematical model was developed for the vertical migration of "light" nonaqueous-phase organic liquid contaminant in soils under field capacity conditions. The model describes the experimentally observed arrest of the nonaqueous-phase liquids (NAPLs) front caused by the swelling of soil organic matter due to its interaction with a contaminant. This effect is not considered in the conventional models of infiltration and mass transfer in porous environments. Calculations were performed whose results agree with experimental data. © 2004 by MAIK "Nauka/Interperiodica" (Russia).
